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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,817	08/21/2001	Christian Wagner	(Z) 98003 P US	9363

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EXAMINER	
LEROUX, ETIENNE PIERRE	
ART UNIT	**PAPER NUMBER**
2858	4

DATE MAILED: 07/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/934,817	Wagner et al
Examiner	**Art Unit**
Etienne LeRoux	2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on May 28, 2002

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-44 is/are pending in the applica

4a) Of the above, claim(s) _____ is/are withdrawn from considera

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-44 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirem

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/255,137 .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Claim Rejections - 35 USC § 112

1.The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-3, 5-10, 13-15, 17-19, 21-23, 25-31, 33-36, 38-41 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "a connecting structure between said optical element and said mount having a symmetry that does not correspond to the shape of the optical element." It is unclear what applicant is claiming by the phrase "having a symmetry that does not correspond to the shape of the optical element" The direction of the line of symmetry Applicant is claiming is unclear, e.g. vertical symmetry, horizontal symmetry or some other plane of symmetry. Examiner is confused by the following taken from page 7, line 33 of Applicant's specification:

The lens 1 and mount 2 are in this case connected with uniform webs or with selectively cooling webs according to Figs. 1 or 2. Any other mounting technique is likewise usable."

Examiner is puzzled by applicant's Figure 2, which shows eight(8) webs rotationally evenly spaced between the lens and the mounting ring. The eight(8) webs have lines of symmetry which correspond with the lines of symmetry of the optical element in, at least, the x, y and z planes.

Claims 2, 3, 36 and 43 are rejected for containing language similar to "a connecting structure between said optical element and said mount having a symmetry that does not correspond to the shape of the optical element."

Claims 5-10, 13-15, 17-19, 21-23, 25-31, 33-35 and 38-41 are also rejected under 35 USC 112, second paragraph for being dependent on a rejected base claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-12 and 17-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (USPAT 4,668,077) in view of McCrary (USPAT 5,557,474) as best examiner is able to ascertain.

Regarding claims 1-12, 17-25, 27, 29, 31-32, 34, 36, 37, 43 and 44, Tanaka discloses: a light source that emits radiation [Fig 3, 60], wherein said optical element [Fig 3, 62] is acted on by said radiation such that a heat supply results from said radiation that lacks symmetry corresponding to the shape of said optical element [Fig 3, 61], the optical element comprises a transmitting element [col 5, lines 15-30], a slit-shaped image field [Fig 3, 61], the optical element is arranged near a field plane [Fig 3, 62], the reticle lacks rotational symmetry [Fig 3, 61], a pupil plane [Fig 3, 63].

Regarding claims 1- 4, examiner maintains that in the referenced patent '077, a mount and an optical element fastened in said mount is inherent. Examiner notes, the MPEP § 2112.01 states "[w]here the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' *In re Spada,* 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)."

Regarding claims 1- 4, 36, 43 and 44, Tanaka discloses the essential elements of the claimed invention except for a connecting structure between said optical element and said mount, having a symmetry characteristic that does not correspond to the shape of the optical element. McCrary discloses a connecting structure between said optical element and said mount, having a symmetry characteristic that does not correspond to the shape of the optical element [Figs 1 and 2, 17 and 18]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tanaka to include a connecting structure between said optical element and said mount, having a symmetry characteristic that does not correspond to the shape of the optical element as taught by McCrary for the purpose of providing a passive thermal expansion compensating mechanism [col 2, lines 8-10].

Regarding claims 26, 28, 30 and 33, Tanaka in view of McCrary disclose the claimed invention except for said reticle illumination consists of off-axis, dipole, or quadrupole illumination. It would have been obvious at the time the invention was made to modify Tanaka in view of McCrary to include reticle illumination consists of off-axis, dipole, or quadrupole illumination since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claims 35-38, Tanaka discloses the essential elements of the claimed invention except for the connecting structure comprises portions of different materials. McCrary discloses the connecting structure comprises portions of different materials [Fig 2, cl 3, lines 40-45, col 4, lines 5-10]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tanaka to include the connecting structure comprises portions of different materials as taught by McCrary for the purpose of providing temperature compensation [col 3, line 48].

Regarding claims 39-42, Tanaka discloses the essential elements of the claimed invention except for the connecting structure comprises adjustable portions. McCrary discloses the connecting structure comprises adjustable portions [col 3, line 62 through col 4, line 10]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tanaka to include the connecting structure comprises adjustable portions as taught by McCrary for the purpose of providing temperature compensation [col 4, line 6].

Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (USPAT 4,668,077) in view of McCrary (USPAT 5,557,474) as applied to claims 1-4, and further in view of Tokuhara et al (USPAT 4,459,016), as best examiner is able to ascertain.

Regarding claims 13-16, Tanaka in view of McCrary disclose the essential elements of the claimed invention except for the optical element comprises a mirror. Tokuhara discloses the optical element comprises a mirror [Fig 1, 4]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tanaka in view of McCrary to include then optical element comprises a mirror as taught by Tokuhara for the purpose of controlling length of the optical path [col 3, lines 15-20].

Response to Arguments

5. Applicant's arguments filed 5/28/2002, have been fully considered but they are not persuasive.

6. Applicant states on page 9, "McCrary does not disclose a 'heat supply .... that lacks symmetry corresponding to the shape of said optical element.'" Examiner is persuaded. Applicant is referred to supra new art rejection of the above limitation over Tanaka.

Applicant states on page 10, "McCrary additionally does not disclose a mount having a symmetry characteristic that does not correspond to the shape of the optical element ..... as recited in Applicant's claim 1." Examiner is not persuaded. Firstly, Applicant's specification does

not provide any particular meaning for "does not correspond." Secondly, examiner is confused by the following taken from page 7, line 33 of Applicant's specification:

The lens 1 and mount 2 are in this case connected with uniform webs or with selectively cooling webs according to Figs. 1 or 2. Any other mounting technique is likewise usable."

Due to the indefiniteness of the claim language, examiner maintains McCrary's elements 17 and 18 read on the limitation "a mount having a symmetry characteristic that does not correspond to the shape of the optical element."

Applicant states on page 10, "Note that 'selective control of the angle interface' relates to McCrary's distance setting means between two elements." Examiner is not persuaded. McCrary is teaching temperature compensation per the following excerpt from column 3, line 48 through column 4, line 26:

As the temperature rises, all of the spacers, as well as all of the mechanical elements of the system, expand. However, the even spacers 12 and 14 expand considerably faster than the odd spacers 11, 13 and 15. Being annular rings, the even spacers 12 and 14 move outward relative to the central axis of the optical system faster than the odd spacers 11, 13 and 15. This would permit gaps to form between the spacers, thereby permitting the air space between the lens elements 10a and 10b to be reduced by biasing the lenses and rings together. To assure that the spacers in the lens elements are abutting at all times, a biasing means, such as a load spring, elastic material or other form of passive biasing 16 (including gravity or other form of acceleration if the lens system continuously faces the direction of the acceleration) is used. To package the lens system, a two-part mount 17 and 18 is used. The two-part mount consists of a first mount or male member 18 through which a bore is formed for holding the lenses 10a and 10b, and the even and odd spacers 11-15. A second mount or female member 17 is screwed over the first mount member 18 to maintain the biasing means 16 such as a load spring or elastic member against the first lens element 10a to assure that the lenses 10a and 10b are not free to move or vibrate while maintaining the abutting relationship of the elements. If a positive dimensional change is desired,

i.e., the lenses 10a and 10b move apart with increased temperature, one need only select materials wherein the even spacers 12 and 14 have a lower coefficient of thermal expansion than the odd spacers 11, 13 and 15. As shown in FIG. 2, the number of interfaces n and the relative angle .o slashed. therebetween can be utilized to control the degree of change in the spacing between the two objects or lenses 10a and 10b. Specifically, the smaller the angle .o slashed. between the radial plane 19 and the interface surface, the smaller the degree of change in the spacing. The larger the angle .o slashed., of course, the greater the change in the spacing between the two objects 10a and 10b. However, too steep an angle .o slashed. might result in the interfaced surfaces locking together due to their relative coefficients of friction or Brinelling wherein the surface texture of one of the harder material punches into the surface of the softer material. To avoid the necessity of using too steep an angle, one might properly select a greater number n of interfaces, increase the contact radius R or choose other materials having suitable coefficients of thermal expansion.

Applicant states on page 10, "McCrary and Ohsaki do not motivate or suggest to one skilled in the art to combine these references to produce Applicant's claimed invention." Applicant's argument is moot as supra new art rejection does not include Ohsaki.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. USPAT 3,587,063 to Lamberts teaches a light source that emits radiation which provides a heat supply that lacks symmetry corresponding to the shape of said optical element.

2. USPAT 4,577,305 to Allen et al teaches a light source that emits radiation which provides a heat supply that lacks symmetry corresponding to the shape of said optical element.

3. USPAT 5,557,413 to Ebihara et al teaches a light source that emits radiation which provides a heat supply that lacks symmetry corresponding to the shape of said optical element.

4. USPAT 6,211,896 to Morton teaches a light source that emits radiation which provides a heat supply that lacks symmetry corresponding to the shape of said optical element.

5. USPAT 4,846,578 to Morita teaches a light source that emits radiation which provides a heat supply that lacks symmetry corresponding to the shape of said optical element.

6. USPAT 4,855,792 to Holbrook et al teaches a light source that emits radiation which provides a heat supply that lacks symmetry corresponding to the shape of said optical element.

7. USPAT 4,595,273 to Watanabe et al teaches a light source that emits radiation which provides a heat supply that lacks symmetry corresponding to the shape of said optical element.

8. USPAT 5,741,056 to Liu teaches a rectangular lens support

9. USPAT 5,764,312 to Okumura teaches a rectangular lens support.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne (Steve) LeRoux whose telephone number is (703) 305-0620.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le, can be reached at (703) 308-0750.

Any inquiry of a general nature relating to the status of this application or processing procedure should be directed to the receptionist whose telephone number is (703) 308-0956.

Etienne LeRoux

July 19, 2002

N. Le
Supervisory Patent Examiner
Technology Center 2800